Stefanie Mollborn   *University of Colorado at Boulder*

Making the Best of a Bad Situation: Material Resources and Teenage Parenthood

Past research has largely ignored the influence of material resources on teenage parents' life outcomes. A lack of resources such as housing, child care, and financial support is hypothesized to explain the negative effect of teenage parenthood on educational attainment. Regression analyses use nationally representative data from the 1988 – 2000 National Education Longitudinal Study (N = 8,432, n = 356 teenage parents). Results support the hypothesis completely for the teenage fathers in the sample and partially for mothers: Resources substantially diminish the educational penalty teenage parents paid by age 26. Gender influences which types of resources are protective, providing policy implications. Help with child care is critical for teenage mothers, whereas housing and financial resources may be important for men.

Teenage parenthood has been a highly visible social problem in America for the past several decades (Furstenberg, 2003). Sixty-eight percentage of a recent sample of adults thought that teen pregnancy was ''a major problem facing our country'' (Race, Ethnicity and Medical Care Survey, 1999), despite falling rates of teenage pregnancy in recent years. Concerned citizens and researchers alike worry that adolescents who become parents are ruining their own and their

children's future prospects. This study examines the long-term effects of teenage parenthood and the extent to which material resources can protect adolescent parents from worsened life outcomes. One of the primary areas in which teenage parents' futures may suffer is educational attainment. Over the years, a voluminous body of literature has been produced investigating the effect of becoming a teenage parent on educational outcomes. For young people today, a high school degree is a common prerequisite for postsecondary schooling and a minimum requirement for most attractive employment opportunities (Upchurch & McCarthy, 1990). Finishing a 2- or 4-year college or graduate degree brings even greater financial and noneconomic rewards (Kane & Rouse, 1995).

Most researchers have found that on average, teenage parenthood is associated with worsened educational outcomes (see Hoffman, 1998, for a review), but this association has been debated because of concerns about two types of potential bias. Early research overestimated the size of the teenage parenthood effect because of *selection bias*: Unobserved heterogeneity of socioeconomic and other family and individual characteristics actually accounts for much of the apparent educational effect of teenage parenthood. Even when this bias was reduced using natural comparison groups to teenage mothers such as childless sisters (Geronimus & Korenman, 1992), childless twins (Grogger & Bronars, 1993), and pregnant teenagers who miscarried (Hotz, McElroy, & Sanders, 1997, 2005), though, most studies have still found a negative effect of becoming a teenage parent on educational outcomes.

Institute of Behavioral Science, University of Colorado at Boulder, 483 UCB, Boulder, CO 80309-0483 (mollborn@ colorado.edu).

Other research has found no negative effect of teenage parenthood on *short-term* educational measures such as dropout once *endogeneity bias* has been accounted for (Ribar, 1994; Upchurch & McCarthy, 1990). In other words, becoming a parent does not cause school dropout, but rather, preexisting socioeconomic and other factors cause both parenthood and dropout. The use of such short-term measures of school dropout may incorrectly overestimate the educational effect of parenthood because in the long term, many adolescent parents who dropped out do return to school at some point (Furstenberg, Brooks-Gunn, & Morgan, 1987; Rich & Kim, 1999). Most studies have found a negative effect of adolescent parenthood on educational attainment in the *long term*.

Discussions of both selection bias and endogeneity bias have focused on the socioeconomic resources that were available to teenagers and their families *before* they became parents. Meanwhile, surprisingly little research has explored the role of the material resources that are available *after* becoming parents in facilitating adolescents' educational attainment. By proposing a resource-based explanation for the educational penalty paid by teenage parents, this study offers the first systematic analysis of this important, if straightforward, argument using national data. The field has neglected to examine such apparently "obvious" premises in the past. For example, the long-standing idea that teenage parenthood is associated with a very large educational penalty has now been debunked by researchers reducing selection bias. For this reason, it is important to examine empirically how important material resources really are for teenage parents' educational attainment.

The importance of resources for adolescent parents' socioeconomic outcomes has received limited support in a few small-scale regional studies (Colletta, Gregg, Hadler, Lee, & Mekelburg, 1980; Furstenberg, 1980; Furstenberg & Crawford, 1978; Henly, 1997). Unlike some researchers who have defined resources as emotional, psychological, or informational support (see Letourneau, Stewart, & Barnfather, 2004, for a review), I focus on material resources such as financial support and child care. Preliminary evidence from small samples suggests that such resources are important for understanding parents' educational outcomes (Furstenberg & Crawford), perhaps more than emotional support (Henly). Why have material resources largely been overlooked as a proximate cause of teen parents' negative life outcomes? Traditional wisdom about the causes and consequences of teen parenthood does not take resources into account. In public discourse, the personalities, aspirations, deviant tendencies, and race/ethnicity of teen parents are the frequently cited reasons for adolescent parents' failures. To some extent, the academic literature on the subject also reflects this bias toward individual characteristics and group memberships. Focusing on resources shifts the locus of explanation for teen parents' outcomes from the individual to the social structure.

There seem to be two primary causes of decreased educational attainment among teenage parents compared to nonparents: increased resource needs and a dearth of available resources among adolescent parents. Mothers and fathers need money to buy food, clothing, diapers, and other items for their children. They require either somewhere to live with their children rent-free or money for rent. In order to attend school or work for pay, they must also have either free babysitting help or money for child care. Evidence suggests that for most teenage parents, these high resource demands are not being met, either by themselves or by others (Furstenberg, 1976). Seventy-five percentage of all children of single teenage parents grow up in poverty in the United States (Cherry, Dillon, & Rugh, 2001). The resources available to teenage parents are likely influenced both by their family's preexisting socioeconomic characteristics (the family's pool of potential resources) and by resource contributions spurred by the increased resource needs of the parent.

These commonsense arguments lead me to hypothesize that a lack of material resources explains part of the observed educational penalty paid by teenage parents. It seems logical that adolescent parents who are provided with more resources such as housing, money, and child care should have more time and energy to devote to schooling than those who must fend for themselves. For example, if a teenage mother lacks money to support her child, she must find paid work, even if this means dropping out of school. A father who does not have a caretaker for his child or money to pay for child care must leave school and provide the care himself. Therefore, teenage parents who have access to needed material resources should get more education than teenage parents without resources.

Can this argument be expected to apply both to female and to male teenage parents? Reflecting public discourse, most research on teenage parenthood has focused exclusively on women. Practical concerns such as identifying teenage parents and some teenage fathers' limited involvement with their children also make it easier to study mothers exclusively. The implicit justification for these gender-segregated study designs is that the experience of teenage motherhood is too different from that of teenage fatherhood to be comparable. Although this may be true in some cases because of variations in the extent and nature of adolescents' parental involvement, it seems probable that some important processes work similarly for many fathers and mothers. The idea that resources may help explain the negative effect of teenage parenthood on educational attainment should apply to both mothers and fathers, even if the effects of specific resource types may differ by gender. I include both genders in this study in order to assess this idea.

As the dependent variable, I use a measure of educational attainment that has a number of strengths. It is assessed at about 26, an age by which most respondents will have completed their formal education (Stoops, 2003), so right censoring should be only a mild problem. Two other conventional measures of socioeconomic status (SES), income and occupational status, would not have worked as well at age 26 because of continued changes throughout adulthood (Day & Newburger, 2002). As an additional advantage, the independent variables are measured between 8 and 12 years before educational attainment is measured. This provides a long-term perspective on the effects of teenage parenthood on education. Significant results for the resource measures would mean that an imperfect "snapshot" of a teenage parent's available material resources taken at about age 18 has educational effects 8 years later, providing a conservative test of the importance of resources.

What kinds of material resources do teenage parents need? Four measures are analyzed in this study, with three applicable to all adolescents and a fourth meaningful only among teenage parents. Although there is some overlap in the resource types each variable measures (e.g., paid work and living at home both reflect a teenager's potential financial resources), each variable provides some unique information about the potential resources an adolescent may have in terms of money, housing, and child care. All are measured at the 1992 interview, by which time all of the respondents labeled as teenage parents had a child and most were 18 years old. This necessarily provides a limited picture of resource availability rather than a more nuanced, long-term view. Although "one-shot" indirect measures are not ideal for capturing the true effect of resources, they are the best yet available in a national survey that provides a large enough sample to include sizeable numbers of teenage parents, as well as longitudinal data on educational attainment well into young adulthood. Other promising data sources, such as the National Longitudinal Survey of Youth (begun in 1997) and the National Longitudinal Study of Adolescent Health (begun in 1994), may offer some stronger measures of teenage parents' resources and may be available for analyzing educational attainment in a few years.

As the first measure of resources, *living with one's parents* has been shown to encourage continued schooling for teenage parents (Furstenberg & Crawford, 1978; Trent & Harlan, 1994) by providing free housing and a potential source of both child care and financial resources (Furstenberg, 1980). Second, *marriage* could be perceived as a source of resources for teenage parents, because they have a spouse to share parenting and financial responsibilities. Alternatively, it could be considered a liability. For example, with marriage adolescents usually leave their home of origin, so it may be a disadvantage because the respondent's parents likely have greater financial resources than a young spouse and may provide more child care (Furstenberg, 1980). Third, the necessity of *working for pay* implies a lack of financial resources, although some people who neither work nor have financial support may be even worse off than paid workers. Needing to work to support family members is a commonly cited cause for dropping out among teen parents who left school in the survey analyzed here. Although working just a few hours a week is not usually detrimental to school attendance, there is a threshold around 20 hours per week past which the educational benefit of paid work becomes a disadvantage (Ruscoe, Morgan, & Peebles, 1996). Finally, *child care* is an important material resource that is not applicable to nonparents. For this reason, it is not included in the main model. Instead, I perform a supplementary analysis dividing teenage parents by their primary caretaker status, which may indicate a lack of child-care resources.

Additional variables control for various selection factors. Because of the longitudinal nature of the data, they can be measured before the teenagers had children. Even so, it is unavoidable that some selection factors will not be adequately accounted for in the models. Three main groups of variables are included because they have been shown in previous research to strongly influence who becomes teenage parents: sociodemographic measures such as race/ethnicity and gender, available socioeconomic resources before parenthood, and factors related to educational performance. On average, teenagers who bear children are usually more likely to be female, Black, or Hispanic, to have fewer socioeconomic resources and to have poorer educational performance than those who remain childless in adolescence.

METHOD

Data

The data in this study come from the 1988, 1992, 1994, and 2000 waves of the National Education Longitudinal Study, known as NELS (U.S. Department of Education, National Center for Education Statistics, 2002). This survey contains school- and individual-level information about secondary and postsecondary education, employment, and other aspects of the lives of young people entering adulthood. The advantages of NELS that in combination make the survey a better choice than any other national survey for the purposes of this study are its recent data, its relatively large numbers of teenage parents (including both genders), its multiple measures of material resources, and the availability of data throughout adolescence and nearly a decade after high school graduation. The base-year survey from 1988 used a clustered, stratified national probability sample of students in U.S. eighth-grade public and private schools. The first (1988) wave took place as the student respondents completed eighth grade, with follow-up waves 2, 4, 6, and 12 years later. One thousand and fifty-two schools and nearly 25,000 students participated in the first wave of the survey (see Ingels, Scott, Lindmark, Frankel, & Meyer, 1992, for more information).

The 1988, 1992, and 2000 waves are the primary data sources for this study. Most 1992 data were collected in the spring before students graduated from high school, including a separate survey for dropouts. In the 2000 wave, most respondents were 26 years old. The long-term effects of adolescent events and decisions on adulthood can begin to be observed by this age. This study's subsample contains all respondents (including both students and dropouts) who participated in all five waves of the survey, who took the reading and mathematics tests administered by NELS in 1988, and whose parents answered the 1988 and 1992 parent questionnaires. These restrictions were necessary because the analysis uses results from four student/dropout survey waves, two parent survey waves, and the 1988 NELS test battery. A sample inclusion flag for participation in these four specific waves does not exist, so participants from all five waves were selected.

Nonresponse, which is a potential problem in surveys studying marginalized populations such as teenage parents, has been analyzed extensively for the NELS survey (see Carroll, 1996, for details through the third follow-up). Nonresponse from schools, which were the primary sampling unit in 1988, was practically nonexistent. Unit (individual-level) nonresponse and attrition rates were low for most analyzed groups of respondents. Among respondents who were identified as teenage parents in this study on the basis of their responses to questions about their own age in 1992 and their child's age in 1994, 94% participated in all five waves of the survey. NELS sampling weights, which are used in this study, were designed to adjust for unit nonresponse. In this study, respondents who were missing data on any variable had significantly lower unweighted mean levels of educational attainment than those with complete information ($p < .001$).

Variables

Dependent variable: Educational attainment. The dependent variable measures the highest educational degree respondents completed by the 2000 interview, when most of them were 26 years old. These responses were recoded into estimated years of education completed. The coding scheme converting degree into years of education is as follows: no high school degree = 10 years; high school degree but no postsecondary education = 12 years; some postsecondary education but no degree = 13 years; certificate or license = 13 years; Associate's degree = 14 years; Bachelor's degree = 16 years; Master's degree or equivalent = 18 years; and PhD or professional

degree = 20 years. An alternative categorical coding of education by degrees earned resulted in very few differences in findings. Table 1 displays weighted means for all variables.

Teenage parenthood. Respondents who reported in either 1992 or 1994 that they had a child by the time of the 1992 interview (when most respondents were completing their senior year of high

Table 1. *Variables Used in Analyzing Educational Attainment: Weighted Means and Standard Errors (*N = 8,432*)*

Variable	Nonparents (*n* = 8,076)		Teenage Parents (*n* = 356)		Teenage Mothers (*n* = 298)		Teenage Fathers (*n* = 58)	
	M	SE	M	SE	M	SE	M	SE
Education in 2000 (years; min. 10; max. 20)	13.94***	.04	11.94	.12	11.99	.13	11.63	.20
Parents living with R in 1992								
None[a]	.04***	.01	.38	.06	.41*	.07	.22	.06
One	.18	.01	.21	.03	.21	.04	.22	.06
Two	.78***	.01	.41	.05	.38	.05	.56	.07
Married/cohabiting in 1992[b]	.03***	.003	.38	.05	.36	.05	.53	.08
Still same spouse in 2000[b]	.01***	.001	.20	.03	.18*	.03	.36	.09
Not same spouse in 2000[b]	.02***	.002	.17	.03	.17	.03	.17	.05
Worked ≥ halftime in 1992[b]	.19**	.01	.35	.06	.30***	.07	.66	.07
Caretaker status in 1992								
Primary caretaker			.81	.03	.87***	.03	.44	.08
Not primary caretaker[a]			.15	.03	.09***	.03	.48	.08
Missing information			.05	.01	.04	.01	.08	.04
Teen parent's age at birth of oldest child								
<18 years			.74	.04	.76	.04	.60	.08
≥18 and <20 years			.26	.04	.24	.04	.40	.08
≥2 children born to teen parent by 1992 interview[b]			.25	.07	.26	.08	.21	.08
Female respondent[b]	.48***	.01	.86	.03				
Race/ethnicity								
Non-Latino White[a]	.77**	.01	.64	.05	.65	.05	.61	.08
Non-Latino Black	.11**	.01	.19	.03	.20	.04	.10	.04
Latino	.08**	.01	.15	.04	.14	.04	.23	.07
Asian	.03***	.003	.004	.002	.01	.003	0	0
Native American	.01*	.001	.02	.01	.01*	.01	.05	.04
1988 lived with two parents[b]	.83***	.01	.71	.04	.69	.05	.80	.06
Parents' SES in 1988 (min. −2.97, max. 2.56)	−.01***	.02	−.62	.09	−.62	.10	−.64	.08
1988 % free lunch in school	22.57***	.85	34.55	3.31	33.45	3.61	41.13	5.43
NELS test score in 1988 (min. 30.71, max. 75.81)	52.30***	.22	43.87	.65	43.86	.69	43.94	1.74
1988 behavior problems[b]	.09***	.01	.22	.04	.21	.04	.30	.07
1988 educational aspirations (years; min. 10, max. 18)	15.58***	.04	14.06	.21	14.10	.23	13.84	.38
1988 ever held back[b]	.16***	.01	.44	.06	.41	.07	.58	.08

Note: Source—NELS, base year through fourth follow-up (1988 – 2000). Numbers in parentheses are standard errors for weighted means. Weighted means account for sample design effects (stratification and clustering). Teenage parents are compared to nonparents, and teenage mothers are compared to teenage fathers using *t* tests for means difference for continuous variables and design-based *F* tests for categorical variables. NELS = National Education Longitudinal Study; SES = socioeconomic status.

[a]Reference category. [b]0 = *no*; 1 = *yes*.

*p < .05. **p < .01. ***p < .001.

school) and before the month of their 20th birthday were considered to be teenage parents. On the basis of these criteria, 356 teenage parents were identified, or 4% of the overall sample. Most (298, or 84%) of these respondents were girls, and 58 were boys. Results for teenage fathers should be treated as suggestive both because fathers who were not aware of their paternity could not be identified and because of the small sample size.

Resource variables. First, respondents' *living arrangements* were coded using a set of indicator variables: living with two parents at least half of the time in 1992 (as reported by respondents' parents), with one parent, or with none (the reference category). Second, a dichotomous variable indicates respondents' current *marital status* in 1992. Respondents who were *married or in a marriage-like relationship* received a value of 1, and *all others* (unmarried, divorced, separated, widowed, and other) received a value of 0. Third, a dichotomous variable measures whether a respondent *worked at least halftime* (20 hours per week) at the time of interview in 1992. Fourth, some analyses separate teenage parents into three groups by their *child-care* arrangements in 1992 using indicator variables: primary caretakers, not primary caretakers, and those missing child-care data. *Primary caretakers* are defined as respondents who reported that they cared for their youngest child *most of the time*.

Sociodemographic variables. The *female* variable is coded as a (0,1) indicator. *Race/ethnicity* is self-reported and operationalized as a set of dichotomous variables (Latino ethnicity or a racial category among non-Latinos: Native American, African American, and Asian) with non-Latino White as the reference category. Other variables capture respondents' available resources before becoming teenage parents. Respondents' *family structure* in eighth grade (1988) is an indicator variable with a value of 1 for respondents who *live with two parents* (including combinations of one parent and one stepparent or guardian) and 0 for *others* (living only with one parent or with a nonparent guardian). This variable is similar to the 1992 measure of living with parents, but it precedes parenthood and is included here as a control. *Parents' SES* is a composite variable computed by NELS' researchers using a complex formula

including parent-reported educational levels, occupations, and family income from the 1988 wave with student-reported values filling in any gaps (see Ingels et al., 1992, for more information). The resulting composite variable ranges from −2.97 to 2.56. *Community poverty* is roughly measured by the percentage of children at the respondent's school who received free or reduced-price school lunches in 1988.

Education-related control variables. Several variables measure various education-related factors at the individual level before respondents become parents. Respondents' *composite scores* on eighth-grade mathematics and reading tests, administered by NELS, range from 0 to 100. A dichotomous variable indicates whether respondents "had been considered to have a *behavior problem* at school" by eighth grade (parent reported). *Educational aspiration* in eighth grade is measured as the highest educational degree respondents plan to complete. The possible response choices were six ordered categories, recoded into estimated years using the coding scheme applied to educational attainment above. Finally, a variable indicates whether the respondent was ever *held back a grade* by 1988. Parents' reports are used if available; otherwise, the respondent's report is used.

RESULTS

Bivariate Analyses

Bivariate analyses reveal key differences between teenage parents and nonparents. Table 1 compares weighted means for all variables for teenage parents with nonparents and teenage mothers with fathers and tests for significant differences. Most teen parents (86%) are girls (weighted mean), compared to 48% of nonparents ($p < .01$). Although nearly two thirds of teen parents are White, they are significantly more likely to be African American ($p < .01$), Latino ($p < .01$), or Native American ($p < .05$) and less likely to be White ($p < .01$) or Asian ($p < .001$) than are nonparents. The average teenage parent has 11.9 years of education or about a high school degree, whereas the average nonparent has attended nearly 2 years of postsecondary education (13.9 years). This substantial difference is statistically significant

($p < .001$). Teenage fathers attain 0.4 years less education than mothers (*ns*).

Bivariate analyses comparing teenage parents to nonparents show that even before they had children, the former group was educationally and socioeconomically disadvantaged on every measure. In 1988, respondents who would become teenage parents by 1992 as compared to their peers who would not bear children as adolescents were significantly less likely to live with two parents, had lower average levels of family SES, and had a higher percentage of students receiving free or reduced-price lunches at their schools ($p < .001$). In terms of educational factors, in eighth grade future teenage parents as compared to future nonparents had significantly lower test scores, were more likely to have had behavior problems in school, had lower educational aspirations for the future, and were more likely to have been held back at least one grade ($p < .001$).

Teenage parents' relative lack of resources is also reflected in the 1992 measures from after they became parents. Compared to their childless counterparts, in 1992 teenagers with children were significantly less likely to live with both parents ($p < .001$), more likely to live with neither parent ($p < .001$), and more likely to work at least halftime ($p < .01$). To what extent does disadvantage stemming from a lack of resources explain the educational penalty paid by adolescent parents?

Multivariate Analyses

I estimate linear regression models of educational attainment at age 26 on teenage parenthood status, resource measures, and sociodemographic and education-related control variables. Stata statistical software estimates the linear regressions accounting both for probability weights that make the sample representative of the national population and for stratification and clustering in the sampling frame (StataCorp, 2003a). Taking complex survey design into consideration allows for more accurate calculations of standard errors (StataCorp, 2003b). Results are presented separately for female and male respondents in Table 2. All included variables were entered simultaneously in each model. The models fit the data well, with between 42% and 45% of the variation in 2000 educational attainment explained by independent variables measured from 1988 to 1992 in each model.

The educational penalty at age 26 for becoming a teenage parent is exactly 2 years ($p < .001$; see Table 1), and bivariate regression results (no table) show that 1992 teenage parenthood status explains 2% of the variation in 2000 educational attainment among men and 10% among women. Whereas the amount of variation in educational attainment explained by teenage parenthood is quite different for women and men, the parenthood effect is very similar and does not differ significantly by gender when women and men are included in the same analysis.

Model 1 in Table 2 accounts for some heterogeneity in family background and individual characteristics. Once sociodemographic and education-related factors are controlled but with resource measures still excluded, teenage parents pay a substantial educational penalty of 0.78 years for women and 0.66 years for men (with no significant interaction of teenage parenthood with gender in a supplemental analysis). This education gap between parents and nonparents is highly significant ($p < .001$ for women and $p < .01$ for men).

Model 2 adds the three resource measures that are applicable both to parents and to nonparents, residential and marital status and paid work. Supplemental analyses reveal that the effect of parenthood does not differ significantly between women and men. Among the men in this sample, the educational disadvantage of becoming a teenage parent narrows to 0.24 years and loses statistical significance once these resources are controlled. This loss of significance provides support for the hypothesis that resource availability can explain the educational penalty paid by teenage fathers. The negative effect of adolescent motherhood on education is reduced substantially to 0.53 years but remains highly significant ($p < .001$), indicating partial support for the hypothesis.

In this model, several of the 1992 resource measures are significantly related to educational attainment in 2000. Adolescent marriage cannot be considered a source of resources for either gender. Among women, it is a liability instead, with married respondents receiving 0.37 years less education by 2000 than their unmarried counterparts ($p < .01$). A supplemental analysis (not shown) introduces an interaction between teenage parenthood and marital status, finding that the negative educational effect of marriage does not differ significantly between parents and nonparents for either women or men. Another

Table 2. *Summary of Regression Analysis for Variables Predicting Educational Attainment* (N = 8,432; Women = 4,463; Men = 3,969)

Variable	Model 1				Model 2				Model 3			
	Women		Men		Women		Men		Women		Men	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
TP by 1992[a]	−.78***	.10	−.66**	.22	−.53***	.10	−.24	.24				
Caretaking TP versus nonparent									−.64***	.11	.19	.35
Noncaretaking TP versus nonparent									.17	.35	−.62**	.24
TP missing data versus nonparent									.10	.33	−.22	1.04
Race/ethnicity												
Non-Latino Black versus White	.36**	.11	.15	.14	.25*	.11	.03	.13	.25*	.11	.04	.13
Latino versus non-Latino White	.08	.11	.23	.13	.04	.11	.16	.13	.03	.11	.17	.13
Asian versus White	−.07	.22	.34*	.14	−.09	.21	.30*	.13	−.09	.21	.30*	.13
Native American versus White	−.02	.19	−.42	.21	−.09	.18	−.46*	.20	−.09	.18	−.41*	.21
1988 lived with two parents[a]	.04	.08	.08	.09	−.04	.08	.07	.10	−.03	.08	.07	.10
Parents' SES in 1988	.62***	.05	.85***	.08	.59***	.05	.78***	.06	.59***	.05	.78***	.06
1988 % with free lunch in school	−.002	.002	−.01**	.002	−.002	.002	−.01**	.002	−.003	.002	−.01**	.002
NELS test score in 1988	.06***	.004	.04***	.004	.06***	.004	.04***	.004	.06***	.004	.04***	.004
1988 behavior problems[a]	−.51***	.13	−.43**	.14	−.45**	.13	−.32**	.11	−.49***	.13	−.32**	.11
1988 educational aspirations (years)	.16***	.02	.16***	.02	.16***	.02	.16***	.02	.16***	.02	.16***	.02
1988 ever held back[a]	−.38***	.09	−.49***	.10	−.29**	.09	−.37***	.08	−.27**	.09	−.37***	.08
Number of parents living with R in 1992												
1 versus 0					.26	.13	.89**	.31	.25	.13	.89**	.31
2 versus 0					.42**	.12	.94**	.30	.40**	.12	.95**	.30
Married/cohabiting in 1992[a]					−.37**	.11	−.31	.25	−.35**	.11	−.31	.24
Worked ≥ halftime in 1992[a]					−.34***	.09	−.46***	.08	−.35***	.09	−.46***	.08
Intercept	8.46	.35	9.49	.46	8.35	.35	8.82	.35	8.40	.34	8.81	.35
R^2	.44		.42		.45		.44		.45		.44	
Design-based F	155.36***		118.70***		116.32***		99.50***		103.48***		91.26***	

Note: Source—NELS, base year through fourth follow-up (1988 – 2000). Analyses account for sample design effects (weighting, stratification, and clustering). TP = teen parent; NELS = National Education Longitudinal Study; SES = socioeconomic status.

[a] 0 = *no*; 1 = *yes*.

*p < .05. **p < .01. ***p < .001 (two-tailed tests).

supplemental analysis compares respondents who stayed married to the same person from 1992 to 2000 with those whose marriages dissolved and finds an even greater educational liability for women if they stay married, compared to being unmarried in 1992 (0.51 years; $p < .001$).

As expected, living with either one or two parents in 1992 provides a long-term educational advantage over living with none. Residential status is a particularly important predictor of educational attainment among men, with an advantage of 0.89 years for living with one parent and an advantage of 0.94 years for living with two parents, compared to none ($p < .01$). Women who lived with two parents in 1992 finished 0.42 years more education ($p < .01$) than those who lived with none, whereas results were not significantly different for living with one parent versus none.

Working at least halftime for pay, which is conceptualized as indicating a lack of financial resources, is an educational liability as expected. Female respondents who worked at least 20 hours per week in 1992 ended up with 0.34 years less education than those who work less, whereas the educational penalty for paid work for men was 0.46 years ($p < .001$).

Among the men in this sample, then, resource differences explain most of the relationship between teenage parenthood and educational attainment in these models. Although resources provide a partial explanation for women, a significant effect of teenage parenthood remains. I believe that this is a function of the fact that child-care resources are not satisfactorily accounted for in these models. Recent data show that in households with young children, women spend more than twice as much time as men providing primary child care (Bureau of Labor Statistics, 2005), so it is likely that the provision of child care would benefit mothers more than fathers. Primary caretaker status cannot be introduced into the main model because it is not applicable to nonparents, so Model 3 in Table 2 partitions the effect of teenage parent status into three categories: caretaking teenage parent status, noncaretaking teenage parent status, and teenage parents who are missing child-care information. Among women, the effect of being a teenage parent is actually positive although not significant among noncaretakers and those missing data. Only among primary caretakers is teenage parenthood an educational liability, and for them it is even more detrimental than in the previous

model (0.64 years; $p < .001$). Because the vast majority of adolescent mothers are primary caretakers, the significant negative effect of motherhood on educational attainment in Model 2 could primarily be a function of unobserved caretaker status. This evidence suggests but cannot confirm that child-care resources may explain much of the remaining effect of teenage motherhood on educational attainment in Model 2. If true, this would provide further support for the resource hypothesis among women.

Although the hypothesis is already supported among men in Model 2, the results for men from Model 3 are still interesting. Unlike for women, being a primary caretaker is not an educational liability for men who identified themselves as teenage fathers. Instead, the noncaretaking teenage fathers in this sample pay a substantial educational penalty of 0.62 years ($p < .01$). I will explore this finding in future work.

Analyses thus far have ignored two factors that may influence teenage parents' trajectories because they are not applicable to the nonparents in the sample. First, adolescents who have reached majority and passed school age when they have their first child may not experience the same educational and other penalties suffered by their younger counterparts (Hoffman, Foster, & Furstenberg, 1993). Supplementary analyses not reported divide teenage parents into those younger than 18 years old and those at least 18 years old at the birth of their first child. With no controls added and in models containing the same variables as Models 1 and 2 in Table 2, older teenage parents do not have significantly different levels of education by 2000 (on the basis of post hoc tests) than younger ones. These findings differ from previous research, perhaps because all of these teenage parents were in the same grade in school, and justify combining both age groups in the main analyses. Second, people who have more than one child as teenagers may face greater disadvantages than others (Furstenberg et al., 1987). I divided teenage parents into two groups: those who had one child by the 1992 interview when they should have been in 12th grade and those who had two or more children. Among both women and men, the negative effect of having multiple children on educational attainment was greater than the effect of having one child, but these differences were not significant.

Figure 1 provides an illustration of the relative importance of teenage parent status, gender, and material resources after becoming a parent for
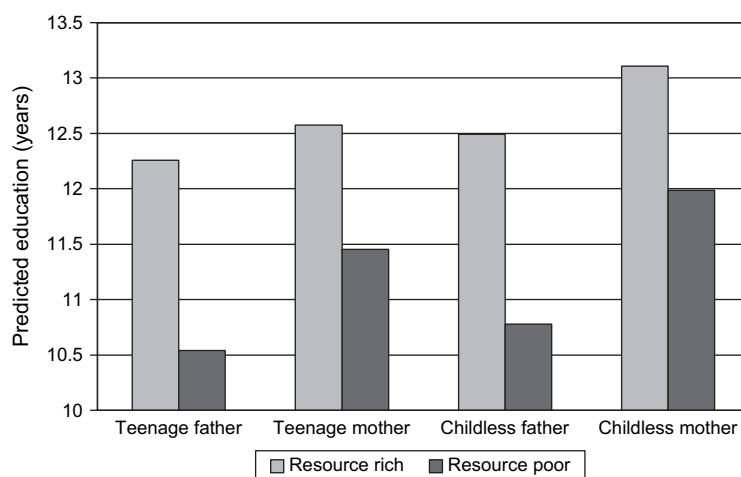
Note: Source—National Education Longitudinal Study, base year through fourth follow-up (1988 – 2000). Predictions use estimates from Model 3, reported in Table 2. Analyses are split by gender and account for sample design effects. *Resource rich* is coded as unmarried, working less than halftime, and living with two parents in 1992. *Resource poor* is coded as married, working at least halftime, and living with no parents in 1992. Predicted values are computed using teenage parents' weighted means/modes for all other variables. *Childless* respondents either had no children by the 1992 interview or were at least 20 years old when their first child was born.

educational attainment. Predicted educational attainment is displayed for eight hypothetical respondents who differed only by gender when they were in eighth grade. At that time, all eight had a sociodemographic and educational profile in 1988 that was average for respondents who would later become teenage parents (non-Latino White from a two-parent household with no reported behavior problems in school, held back at least one grade for boys, and never held back a grade for girls, educational aspirations of 13.84 years for boys and 14.10 years for girls, a NELS-administered test score of 43.94 for boys and 43.86 for girls, a family SES score of −0.64 for boys and −0.62 for girls, and from a school where 41% of students for male respondents and 33% for female respondents received free or reduced-price lunches). By 1992, two female and two male hypothetical respondents reported that they had become teenage parents. The other hypothetical female and male respondents were not teenage parents by 1992. Within each category (teenage mothers, teenage fathers, childless women, and childless men), one hypothetical respondent was resource rich in 1992, meaning that the teenager worked less than halftime, was

not married, and lived with two parents. The other hypothetical respondent in each category was resource poor in 1992, meaning that the teenager worked at least halftime, was married, and lived with neither parent.

Several interesting conclusions can be drawn by studying predicted educational attainment in this illustration. Regardless of resource availability, the hypothetical teenage parents all paid an educational penalty of 0.2 – 0.5 years compared to their childless counterparts. Resources did not explain all of the negative effect of parenthood, but *material resources turned out to be more important for future educational attainment than teenage parenthood.* Regardless of teenage parent status, resource-rich hypothetical respondents attained between 1.1 and 1.7 years more education by 2000 than their resource-poor counterparts. This greater effect of material resources compared to parenthood is clear when comparing resource-rich hypothetical teenage parents to their resource-poor childless counterparts. Because of their greater available resources, the former respondents received 0.6 years more education among women and 1.5 years more education among men *despite* having

children. This is not just a function of family SES or other background characteristics, which have already been controlled, but is instead a direct result of differences in hours worked, living with parents, and marital status. A more realistic comparison reflecting respondents' real-life situations, although, is one between resource-poor teenage parents and resource-rich childless respondents. When the detrimental effects of teenage parenthood and resource deprivation are compounded, the hypothetical women attain 1.7 years less education and the men 2 years.

CONCLUSIONS

Using recent longitudinal data from a nationally representative survey, this study shows that teenage mothers' and fathers' educational disadvantage compared to their childless peers begins even before they have children because of worse socioeconomic and educational starting points in eighth grade. Teenage parents have an additional disadvantage over most childless adolescents because of their much greater need for material resources that far outstrips the available reserves of most teenagers. This study hypothesizes that material resources explain why there is an educational penalty for becoming a teenage parent. Results support the hypothesis among men and provide partial support among women. For the men in this sample, being a teenage parent has no significant effect on educational attainment once the resources available after becoming a parent are controlled. The effect of teenage parenthood controlling for resource availability is greatly reduced but still significant for women, and further analysis suggests that child-care resources may explain even more of the educational penalty paid by mothers.

This study has some important limitations. It cannot fully account for selection factors, so the negative educational effect of teenage parenthood may be overestimated. As with all longitudinal studies, attrition and nonresponse are important concerns. Material resources are represented by crude measures from one point in time. The small number of teenage fathers in the sample is another important limitation. New data should be collected containing greater numbers of teenage parents (especially fathers) and more fine-grained direct measures of material resources from multiple time points. Examples of such resources include details about child care; parents' cash support, including family, child

support, and public assistance; and their nonmonetary support such as food stamps, free housing, and donated baby items. Future research should also examine the relative effects of various resource types on schooling specifically among teenage parents. Even though gender differences in the effects of parenthood were not found in this study, further analysis should explore possible ways in which gender may shape the availability of various types of resources for adolescent parents.

Assuming there is a causal link between becoming a teenage parent and educational attainment at least 8 years later, this study's findings offer a message of hope for policymakers. Although most teenage parents do suffer a long-term educational penalty for having children, this need not be the case. If they are provided with enough material resources, contemporary teenage parents may be able to go quite far in school, despite their initial socioeconomic and educational disadvantage. Traditional ideas suggest that teenage parents should get married, the mothers should become primary caretakers of their children, and the fathers should work to support their children financially. Evidence from this study suggests that these actions may actually decrease adolescents' long-term educational attainment. Financial aid packages similar to those offered for higher education may be a way to provide financial resources and to reduce the need for paid work among teenage parents. Adolescents, especially teenage fathers, could be encouraged to continue to live with their parent or parents instead of moving out on their own or with a spouse. Teenage mothers could be encouraged to share the care of their child with others in order to increase their educational attainment. Generally, recommendations for policies related to teenage parenthood should consider the implications for educational attainment.

These findings are valuable because they help explain the well-documented negative effect of becoming an adolescent parent on one's future educational attainment. Additionally, this study is the first using national data to show that material resources account for a large part of the educational penalty that teenage parents pay. Although the idea that material resources may help teenage parents get more education seems obvious, it has not been spelled out and tested on a large scale. Finally, the results also have important policy implications because providing teenage parents with resources may reduce the educational penalty of parenthood, likely

improving socioeconomic conditions for both parent and child.

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